Routledge
Taylor & Francis Group

Economics of Innovation and New Technology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/gein20

The experience matters: participation-related rewards increase the success chances of crowdfunding campaigns

Tobias Regner & Paolo Crosetto

To cite this article: Tobias Regner & Paolo Crosetto (2020): The experience matters: participation-related rewards increase the success chances of crowdfunding campaigns, Economics of Innovation and New Technology, DOI: 10.1080/10438599.2020.1792606

To link to this article: https://doi.org/10.1080/10438599.2020.1792606

ECONOMICS OF INNOVATION AND NEW TECHNOLOGY
https://doi.org/10.1080/10438599.2020.1792606

The experience matters: participation-related rewards increase the success chances of crowdfunding campaigns

Tobias Regner[a] and Paolo Crosetto[b]*

[a]University of Jena, Jena, Germany; [b]GAEL, INRA, CNRS, Grenoble INP, Univ. Grenoble-Alpes, Grenoble, France

ABSTRACT

Crowdfunding recently emerged as an alternative funding channel for start-ups, creative artists and social endeavors. On specialized web platforms, project creators ask the crowd for support and provide in return a set of rewards, modulated according to the amount of support pledged. We analyze the role played by the type of reward in mobilizing pledgers; specifically, we look at self- and social-image enhancing rewards and to what extent they determine project success. Our data consist of the pledges to 346 projects hosted by Startnext, the biggest crowdfunding platform in Germany. We show that higher shares of reward levels that let pledgers participate in and experience the project are correlated with project success. Our paper contributes to the literature on the motivation driving pledgers in reward crowdfunding. A practical implication for the managing of a successful campaign is to employ the reward levels as a tool to involve the crowd in the project.

ARTICLE HISTORY
Received 19 December 2019
Accepted 22 April 2020

KEYWORDS
Crowdfunding; entrepreneurial finance; donations; reward levels; identity; self-image; social image

JEL CLASSIFICATIONS
L26; D03; G32

1. Introduction

Reward crowdfunding recently emerged as an alternative funding channel for entrepreneurs, creative artists and social projects. Beside the option to simply donate money, project creators often provide rewards: products or services promised in exchange for pledging a specific amount. Projects differ in the number, nature and monetary requirements of the reward levels offered. A typical project features 'cheap' levels delivering a thank-you note or small gadget, 'medium' levels providing the full product, invitations to events or more elaborated gadgets (notably merchandising), and 'expensive' levels with exclusive or all-comprehensive offers. Levels are usually nested, with the more expensive ones including all rewards of cheaper ones, plus some extra.

Project-level determinants of crowdfunding success have already been studied and some robust stylized facts emerged: quality signals like the project's communication with pledgers (e.g. Mollick 2014; Kromidha and Robson 2016; Gafni, Marom, and Sade 2017; Allison et al. 2017; Clauss et al. 2018), the creator's social capital (e.g. Mollick 2014; Colombo, Franzoni, and Rossi-Lamastra 2015) or being a repeat project creator (e.g. Butticè, Colombo, and Wright 2017; Skirnevskiy, Bendig, and Brettel 2017) increase chances of success as well as campaign features like its target amount or duration (e.g. Mollick 2014; Cordova, Dolci, and Gianfrate 2015; Crosetto and Regner 2018).[1] However, little is known about the impact of the reward structure. While Frydrych et al. (2014) find no correlation between the number of reward levels and project success, Kunz et al. (2017) and Du and Wang (2017) find a positive one. Simons et al. (2017) provide evidence that the cognitive bias for the middle option affects choices among rewards.

CONTACT Tobias Regner tobias.regner@uni-jena.de
*Both authors contributed equally to this research project; the order of the authors was randomized.

In this paper, we look beyond such quantitative and design aspects and into the role played by the type of reward in mobilizing pledgers. For this purpose, we take prior insights about crowdfunders' motivation to pledge into account. Besides material returns, studies identify non-monetary factors as drivers of pledges (see Gleasure and Feller 2016, for an overview). For instance, Gerber, Hui, and Kuo (2012) find that funders are motivated by feelings of connectedness to a like-minded community in interviews at three crowdfunding platforms and Belleflamme, Lambert, and Schwienbacher (2014) stress that 'the crowd must identify themselves as such'. The role of identity-building seems to be crucial in crowdfunding. Therefore, we categorize reward levels based on the concept of identity (Tajfel and Turner 1979), introduced by Akerlof and Kranton (2000) into economic modeling: behavior in line with one's identity results in positive utility, while behavior in contrast with it has negative effects. Plenty of empirical evidence from the lab (e.g. Chen and Li 2009; Güth, Ploner, and Regner 2009; Müller 2019) as well as the field (e.g. Weisel and Böhm 2015) is in line with this.

We hypothesize that such an identity/community feeling of crowdfunders can be supported by rewards that strengthen the relationship between the crowd and the project creator. Rewards can mobilize the self-image of a pledger, her social-image, or both. Rewards that can enhance the *self-image* (see, e.g. Bodner and Prelec 2003; Bénabou and Tirole 2011, for related models) of the pledger as a member of the community are meant for the pledger only. Examples are postcards or individualized services/products. Projects can also use their reward structure to create appeal for funders with *social-image* concerns (Bénabou and Tirole 2005; Ellingsen and Johannesson 2008; Andreoni and Douglas Bernheim 2009). Supporting new products/services – and showing this to others – boosts the social reputation of some individuals and, in turn, translates into an increased willingness to spend. Examples of social-image rewards are special thanks at the end of a movie or being mentioned as donor on the project web site. Some reward levels also cater to both social- and self-image at the same time. This is the case of *participation* rewards, in which the pledger is invited to take part in special project-related events (e.g. a meet&greet). Participation rewards imply the active involvement of the pledger and can boost both her self- and social-image. It is also the case of *merchandising*, e.g. clothing, that can be used to signal membership or support for a subjectively important project to oneself and to others in the social vicinity of the pledger (t-shirts, bags, etc.).

We use data from Startnext to assess the role of reward levels and types in project success. Startnext is the biggest reward crowdfunding platform in Germany, with 74 millions € raised by November 2019.[2] We merge individual pledge data and product characteristics obtained from Startnext with a manual categorization of the rewards based on their ability to mobilize the pledgers' *self-image*, *social-image*, or both, which we distinguish into *merchandising* or *participation*. Our final dataset consists of 346 projects (186 successful), for a total of 785 thousand € raised.

Results show that providing more rewards that appeal to the crowd's identity increases the likelihood of project success. Specifically, success is correlated with the presence of *participation* rewards that offer active involvement in the project. Thus our paper contributes to the literature on the motivation driving pledgers in reward crowdfunding. Our data confirm that non-monetary motivations, more specifically the desire to participate and experience the project, are essential for pledgers.

Furthermore, our study has practical implications for the managing of a successful crowdfunding campaign. Our results are in line with the idea that a key to crowdfunding success is the project creators' ability to conjure a feeling of belonging to a group sharing a common cause.

2. Theoretical framework and hypotheses

Over the last years, crowdfunding has established itself as a substantial funding channel for start-ups, creative artists and social endeavors. In contrast to traditional financial intermediaries, such as banks or venture capitalists, crowdfunding allows individuals to make a direct funding decision. Through online platforms, the crowd (the mass of individuals) provides financial resources in return for

equity stakes (crowdinvesting), interest payment (crowdlending), the future product/service (reward crowdfunding), or simply as a crowd donation.

Reward crowdfunding is employed by a variety of actors: artists who look for money for the next creative work, social projects looking for support, as well as innovative business ventures. Most reward crowdfunding platforms use an all-or-nothing scheme: the project creator receives the crowd's pledges in case their sum surpasses the funding target set by the creator; or nothing if the campaign fails to reach the target. See Strausz (2017), Chemla and Tinn (2019), Ellman and Hurkens (2019) for theoretical models of reward crowdfunding focusing on aspects like demand uncertainty, moral hazard and price discrimination.

Previous empirical research on reward crowdfunding platforms finds that projects' communication with pledgers is a key driver of success. This is exemplified by simple web site quantifiers like videos, images, blog entries (e.g. Mollick 2014; Colombo, Franzoni, and Rossi-Lamastra 2015; Crosetto and Regner 2018), the dialogue between fundraisers and pledgers (Beaulieu and Sarker 2013; Kromidha and Robson 2016; Allison et al. 2017; Clauss et al. 2018; Wang et al. 2018), project descriptions' language (Frydrych, Bock, and Kinder 2016; Yuan, Lau, and Xu 2016; Gafni, Marom, and Sade 2017; Parhankangas and Renko 2017), or social media usage (Borst, Moser, and Ferguson 2017). Moreover, Mollick (2014), Colombo, Franzoni, and Rossi-Lamastra (2015), Polzin, Toxopeus, and Stam (2018) find evidence for a correlation between the creator's social capital and eventual project success. Butticè, Colombo, and Wright (2017), Skirnevskiy, Bendig, and Brettel (2017), Muhammad Usman et al. (2019) show that serial entrepreneurs have higher success chances. Finally, the campaign characteristics length and funding target are negatively correlated with funding success (e.g. Mollick 2014; Cordova, Dolci, and Gianfrate 2015; Crosetto and Regner 2018).

Our study analyzes the relationship between project success and the reward types of a project. For this purpose, we build on prior insights about crowdfunders' motivation to pledge. According to Gleasure and Feller (2016), a recent multidisciplinary review of the crowdfunding literature, funders at reward platforms pledge not only in return for *financial/material benefits* but also because of *social benefits* or *to participate*. The general relevance of pro-sociality and community feelings as a motivation in crowdfunding has already been put forward by Gerber, Hui, and Kuo (2012) and Belleflamme, Lambert, and Schwienbacher (2014). In the context of reward crowdfunding, recent research identified an altruistic funder type based on cluster analysis using Kickstarter transactions (Lin, Boh, and Goh 2014) or survey data (Ryu and Kim 2018). Bitterl and Schreier (2018) contrast crowdfunding with a classic market exchange setting and find that crowdfunders tend to personally connect to and identify more with the venture than classic consumers. Relatedly, Bretschneider and Leimeister (2017) provide survey evidence that crowdinvestors are motivated by the possibility to participate in and influence the development process of the start-up's product.

The recent economics literature acknowledges that, besides pure self-interest, people may also be motivated by non-monetary incentives. Social preference models (see Kagel and Roth 2016, for a recent overview) attempt to explain such other-regarding behavior. Outcome-based models of altruism or fairness (Andreoni 1990; Fehr and Schmidt 1999; Bolton and Ockenfels 2000) assume distributional preferences that allow individuals to get positive utility from giving to others. Another strand of this literature focuses on the role of identity, respectively image concerns. Akerlof and Kranton (2000) introduce the concept of identity into the utility function of individuals.[3] Behavior that is inconsistent with one's identity results in negative payoffs, while behavior in line with own identity has a positive effect. Identity can be interpreted with an inward focus (to the self) or an outward perspective (towards the social environment). Subsequent models distinguish between the focus of individuals' image concerns.

In order to incorporate social-image concerns into individuals' utility function several approaches (Bénabou and Tirole 2005; Ellingsen and Johannesson 2008; Andreoni and Douglas Bernheim 2009) employ signaling models. They assume that people care about monetary payoffs but also consider that some of them enjoy appearing generous to others, especially their peers. Given such concerns for their social reputation, individuals would be more likely to make a pro-social decision, if their choice is visible and an audience they care about is able to observe their decision.

Further signaling models (Bodner and Prelec 2003; Bénabou and Tirole 2011; Tirole, Falk, and Bénabou 2016) replace the outside observer with a dual self to account for self-image concerns as a motivation. Essentially, the dual self serves as an observer of one's own actions and provides informative signals about one's own identity or self-image. Assuming imperfect recall about one's own type (for instance, selfish or pro-social) this setup allows the signaling of being a pro-social type by own generous actions. Note that the scope of self- and social-image concerns alike is broader than plain pro-sociality in the context of crowdfunding. It extends beyond the monetary support of a good cause to aspects like being a supporter of a new cool technology or entrepreneur, and signaling this to others and the self, which may be an identity-defining feature of some people.

There is plenty of empirical evidence in line with self-/social-image concerns. A stream of studies finds increased allocations/contributions in experimental games when subjects share an identity (e.g. Chen and Li 2009; Güth, Ploner, and Regner 2009; Müller 2019). These results are complemented by evidence from the field (e.g. Soetevent 2005; Weisel and Böhm 2015; List, Neilson, and Price 2016). Moreover, several experimental studies (e.g. Ploner and Regner 2013; Grossman and Van der Weele 2017) confirm self-image concerns as a driver of human behavior.

At reward crowdfunding platforms, project creators commonly offer not just their product/service as reward in return for a pledge but a whole set of rewards. The structure of the reward levels allows project creators to incorporate non-monetary incentives that may appeal to potential pledgers. Building on the stream of literature on the relevance of image concerns, we argue that Startnext projects with 'image' reward levels have a higher chance to attract pledgers who are motivated by self- and/or social-image concerns. In turn, we expect a positive correlation between the extent a project incorporates rewards that appeal to self-image concerns and whether a project ultimately reaches its funding target.

Hypothesis 1 Project success is positively correlated with the extent of reward levels that trigger self-image concerns.

In the same vein, we expect a positive correlation between the extent a project incorporates rewards that appeal to social-image concerns and whether a project ultimately reaches its target.

Hypothesis 2 Project success is positively correlated with the extent of reward levels that trigger social-image concerns.

Reward crowdfunding platforms usually also allow pledgers to make a direct donation to the project, without getting anything in return. Building on the mentioned altruism/fairness models we further assume that pro-social concerns are a relevant driver of pledgers' motivation and therefore we expect that a project's ability to attract donations is a determinant of project success.

Hypothesis 3 Project success is positively correlated with the extent of donations that a project attracts.

3. Data set

We obtained a fully anonymized database dump from Startnext. On the Startnext platform projects have a page featuring the funding target, duration time, a text description, a pitch video and pictures. All projects have a blog for updates and to communicate with the public. At any moment, the page displays the remaining time, the current funding level (as an integer % of the target) and number of supporters. Project creators can choose funding durations of 5–90 days.

Our data contain all transactions on the platform from the date of its launch in October 2010 to 10 February 2014.[4] The dataset consists of 2254 projects that reached the funding phase; 1139 of them were successfully funded. For each project we have the following variables (averages in parentheses,

Table 1. Variables in our dataset and randomization checks.

Variable	Unit	Description	Mean (st.dev) Full sample *N*=2,254	Mean (st.dev) Restricted Sample *N*=346	Test statistics
Project-level variables					
Funding duration	days	freely chosen ∈ (5, 90) by the project creator	53.96 (20.99)	57.03 (24.58)	0.35
Target amount	€	the amount project creators seek to raise	6,194.25 (23,927)	4,564.65 (7,140)	0.87
Featured	dummy	project recommended by Startnext and	.083 (.276)	.069 (.254)	0.29
Word count	integer	length of a project's description in words	764.55 (415.33)	755.75 (362.13)	0.92
Video count	integer	number of videos that users can	1.09 (2.31)	.919 (1.72)	0.54
Image count	integer	number of pictures on a project's page	7.58 (9.44)	7.38 (5.42)	0.57
Blog entries	integer	number of entries on a project's blog	3.97 (4.59)	3.67(3.94)	0.39
Project success	dummy	whether project reached funding target	0.505 (.5)	0.538 (.5)	0.21
Reward-level variables					
Number of levels	integer	number of reward levels a project offers	–	9.73 (7.34)	–
Share donations	%	donation share of a project's received funding	–	33.4 (30.2)	–

Note: The test statistics column reports results from ranksum or χ^2 tests depending on the variable type.

see Table 1 for summary statistics): funding duration (54 days), target amount (6,194 €), whether the project has been featured on Startnext's home page (8.3%), number of words (half a page), videos (1.1), images (7.6) on the project page or blog, number of entries on the project blog (4) and the projects' category. The most popular project categories are movie (31.6%), music (25%) and event (11.6%).

The reward level structure was not part of the data dump. We hence crawled information from the individual web pages of 346 randomly picked individual projects – roughly 15% of the total sample.[5] Out of these projects, 54% were successful, raising a total of 785 thousand euro. For each project belonging to our random sample, we collected all the reward levels and the corresponding amounts needed to unlock the reward. Overall, the average project offered 9.73 levels (st.dev. 7.34, minimum 1, maximum 115, median 9). We also gathered whether a reward level was limited to a specific number of pledges and thus not available after that number is reached. Such a cap on support for a level exists for 30.4% of all levels; nonetheless, the support limit was effectively reached only in about 1 case in 10, which makes this potential constraint a minor concern. Besides pledging in return for rewards, Startnext allows to support a project via a donation. Whenever a pledge is made, an outright donation and/or the choice of rewards can be entered. Thus the possibility to support out of pro-social concerns exists for every project. In our sample, projects received, on average, 33.4% of the total amount pledged through donations. Table 1 provides summary statistics, contrasting our sample and the full Startnext sample if applicable. Based on statistical tests, the two samples are not different in any of the variables we use for our analysis.

We then categorized each reward level with respect to its motivational character. The categorization was performed by two research assistants naïve to the aims of the study. Levels fall under one of six categories. They might simply consist of the product or service that is the direct output of the project, and as such constitute a direct pre-sale. Moreover, they might be an outright donation with no rewards attached, labeled as *Dankeschöns* (Thank yous) at Startnext. Last but not least, they can appeal to self- or social-image concerns.

Levels that facilitate the pledgers' identification with the project are categorized as self-image only. We require them to help pledgers remember being part of the project, to have limited public visibility, and to be tangible/physical. Examples are postcards or stickers. The announcement of the pledger's name in a situation with public exposure (e.g. being mentioned as a donor in the

booklet/credits, on a social media platform, the project web site) is regarded as a social-image only reward. Since project merchandising (e.g. t-shirts, bags) facilitates pledgers' identification with the project but also conveys the pledgers' support to the public, we treat it as having both self- and social-image characteristics and classify it under its own *merchandising* category. Being publicly part of the project, for instance, as an extra in the movie, after show backstage access, a meet&greet, also relates to self- as well as social-image, but with a different type of involvement, as it gives the pledger an enhanced sense of community and participation. We classify these as *participation* rewards. Table 2 provides summary statistics by reward level type: the average amount requested, number of actual pledgers and resulting revenue from these levels. Due to the nestedness within the set of rewards 260 levels belong to more than one reward level type.

In the following, our analysis focuses on the following types of rewards: *thank yous* (outright donations), *social-image only*, *self-image only*, and two types of combined self- and social-image rewards (active *participation* in the project and *merchandising*). For each of those reward level types, we compute its relative importance among all reward levels that one project offers. Self-image only rewards account, on average, for 36% of the levels within a project, participation for 24%, social-image only 11%, merchandising 10% and donations via a level 4%. The remaining 15% are pre-sale levels that only entail the actual 'material' reward with no self- or social-image impact. A visual representation of the relative importance of each reward type for each project category is given in Figure 1, in which shares have been forced to sum to 100 for the sake of comparison. We can clearly see that – apart from some categories with little representation in our sample – all categories mobilize, on average, all types of rewards.

4. Results

Table 3 reports marginal effects of four different probit regression specifications. The dependent variable is project success. The specification in column 1 is based on the full Startnext sample of 2254 projects and is given for reference. Columns 2–4 refer to the reward levels sample of 346 projects. Column 2 uses the same 'bare' specification of column 1, without any reference to reward levels. Column 3 provides a supply-side analysis of the impact on project success. Variables reflect the share of each type of level, irrespective of the amount of pledgers that chose them. Column 4 performs instead a demand-side analysis. Variables reflect the share of the total amount of money raised due to that particular type of reward level. Moreover, we add a project's share of donations among the total pledged amount as an explanatory variable. The relative success (or failure) of each level type and donations is thus taken into account. However, levels requiring higher amounts of money have by construction a bigger impact on the likelihood of success, conditional on being chosen. Columns 3 and 4 hence complement each other. All columns include the full set of category dummies (music, games, technology, etc.) as control. All results are robust to the exclusion of category dummies.

Table 2. Summary statistics by reward level type.

	Product/Service only	Thank you	Self-image only	Social-image only	Participation	Merchandising
Amount requested (€)	230.3	16.57	104.8	463.8	592.6	216.9
	(655.1)	(128.5)	(369.6)	(1,061.3)	(3,620.7)	(457.9)
Actual supporters	3.22	4.43	4.28	2.43	3.35	3.88
	(11.18)	(18.83)	(9.92)	(5.01)	(9.45)	(10.53)
Revenue generated	126.7	47.64	132.4	131.9	273.2	211.0
by one level (€)	(380.5)	(236.1)	(360.0)	(381.1)	(678.4)	(633.3)
N	779	136	1,330	391	842	417

Note: The table reports means (standard deviations in parentheses) for each reward level type.

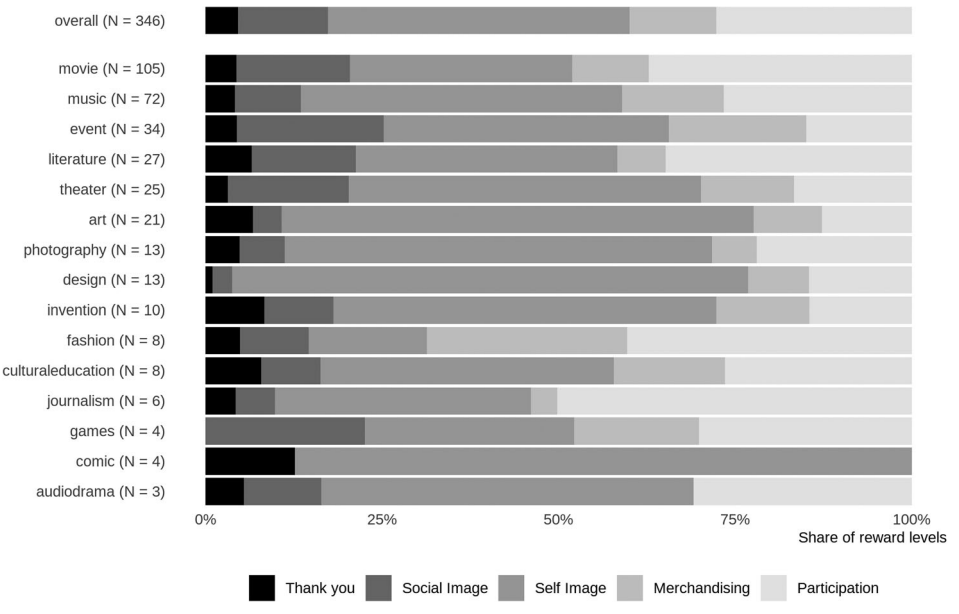

Figure 1. Share of different types of offered rewards within a project, by category.

Table 3. Marginal effects for the reference dataset and different specifications on the reward-level dataset.

	1: reference		2: bare		3: supply-side		4: demand-side	
	Project success		Project success		Project success		Project success	
	coeff.	st.err	coeff.	st.err	coeff.	st.err	coeff.	st.err
Funding duration	−0.0029***	(.0005)	−0.00202	(0.00129)	−0.00231*	(0.00132)	−0.00294**	(0.00148)
Target amount (1000€)	−0.018***	(.0037)	−0.0257***	(0.00956)	−0.0266***	(0.00974)	−0.0362***	(0.0122)
Featured on main page	0.7369***	(.0828)	0.639***	(0.196)	0.662***	(0.193)	.692***	(0.194)
Word count (100)	0.0069	(.0043)	−0.00146	(0.0113)	−0.00299	(0.0115)	−0.0122	(0.0125)
Video count	0.0246***	(.0085)	0.0536**	(0.0269)	0.0488*	(0.0276)	0.0508*	(0.0304)
Image count	0.0039	(.0034)	0.0249***	(0.00747)	0.0247***	(0.00756)	0.0167**	(0.00775)
Blog entries	0.031***	(.0034)	0.0381***	(0.00947)	0.0399***	(0.00977)	0.0358***	(0.0101)
Category dummies	Yes		Yes		Yes		Yes	
Analysis of reward levels								
Number of levels			0.00850	(0.00584)	0.00929	(0.00616)	0.0163**	(0.00770)
Offered levels								
Simple thank you					−0.124	(0.487)		
Self image only					0.00180	(0.00160)		
Social image only					0.00297	(0.00247)		
Self+social: participation					0.00341**	(0.00168)		
Self+social: merchandising					0.00262	(0.00199)		
% contribution to total funding								
Share donations							0.00671***	(0.00125)
Share simple thank you							−0.461	(0.382)
Share self image only							0.000313	(0.00132)
Share social image only							0.00124	(0.00202)
Share self+social: participation							0.00399***	(0.00136)
Share self+social: merchandising							0.00135	(0.00161)
N	2,254		346		346		336	
pseudo-R^2	0.336		0.341		0.353		0.345	

Notes: Probit regressions with marginal effects reported; standard errors in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$. For the specification in column 4, 10 projects are dropped since they collected zero pledges and shares cannot be properly computed.

Columns 1 and 2 replicate the main stylized facts from the literature. For the whole Startnext sample (column 1), success is more likely for less ambitious projects with shorter funding durations; for projects that invest in communication of any form especially videos and news updates via the blog; for projects featured on the Startnext home page. When looking at the category dummies (not shown), music projects are significantly more likely to succeed, while literature projects less so. Most of these findings translate to our smaller sample of 346 projects (column 2). Notable exceptions are image count, which plays a role in the restricted but not in the larger sample, and the funding duration (same sign and similar magnitude but significance level is only p=0.11).

Adding our categorization variables reveals that increasing the share of participation rewards is correlated with project success, all other determinants staying the same. This is true both when looking from the supply side – column 3, including the share of offered reward levels entailing participation in the project – and from the demand side – column 4, taking into account the actual amounts pledged under each type of reward. Results show that giving the crowd more opportunities to be part of the project helps eliciting more crowd support and increases the probability of project success. In particular, since the average project has about 10 reward levels, out of which 2.5 are participation rewards, adding one participation-related reward is predicted to increase the likelihood of success by 4%. This holds irrespectively of whether the offered participation reward is actually chosen or not. The very fact of offering such a reward increases the chances of success. The result is robust to controlling for the reward popularity. It is also robust to taking the role of donations into account. The coefficient of the share of donations among the funding total is significantly positive. Note, however, that additional donation options, that is, reward levels implying a simple thank you, do not seem to increase the project's chances to succeed.

Result 1 Project success is positively correlated with the extent of participation rewards.

To check for further robustness of our results, we look at a regression that considers only projects from the biggest category (movie, 105 observations) and one with the remaining projects. In both the share of participation rewards is significant (5%-level). In a regression exclusive to the second biggest category (music, 72 observations) the share of participation rewards is not significant; it is for the remaining projects.

Figure 2 gives a visual account of the main result. It plots the probability of projects' success by the share of offered (left) and chosen (right) levels of each type. It clearly shows (left panel) that offering more participation rewards is monotonically more conducive to success, while increasing the share of self-image only and social-image only rewards has a negative impact. The analysis is less clear-cut when looking at the amount pledged (right panel). It looks as if the more participation rewards are chosen, the higher the chance of success; but this is not monotonic and some projects for which choices are highly concentrated on participation rewards fail. In general, projects that have choices more evenly distributed across reward types seem to be better off.

Figure 3 illustrates the impact of outright donations, going beyond the linear relationship shown in the regression. Projects that attract no donations *and* projects with a share of donations close to 100% have the lowest success rates. Projects in between, instead, exhibit the increasing success rate implied by the regression. These results indicate that outright altruism, as captured by donations, plays an important role, but need not be the only driver of the crowd if a project is to succeed.

Result 2 While project success is generally positively correlated with the extent of donations, projects with a very low/high share of donations have the smallest chances to succeed.

The relevance of both participation rewards and donations seems odd at first glance. However, this apparent contradiction might be due to an implicit assumption that the crowd is homogeneous. This might not necessarily be the case. It could well be that there is heterogeneity within the crowd (see Lin, Boh, and Goh 2014; Ryu and Kim 2018, for related evidence): one part may be mostly motivated

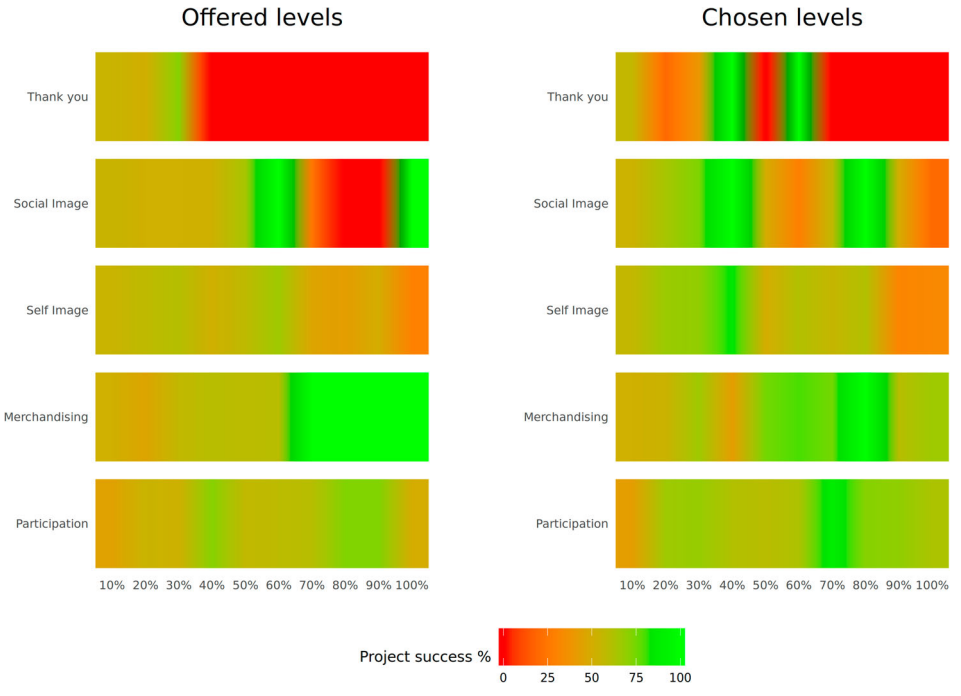

Figure 2. Likelihood of success by share of reward type, supply (left) and demand (right) analyses.

by the experience of being part of a project, another part may largely be driven by pro-social concerns. Thus projects can mobilize two complementary crowds, if they manage to appeal to their respective preferences.

This result is in line with findings by André et al. (2017) who analyze data from the French reward crowdfunding platform Ulule. They report that relying exclusively on donations or transactions are both negatively correlated with project success; instead, being able to attract pledges that are a

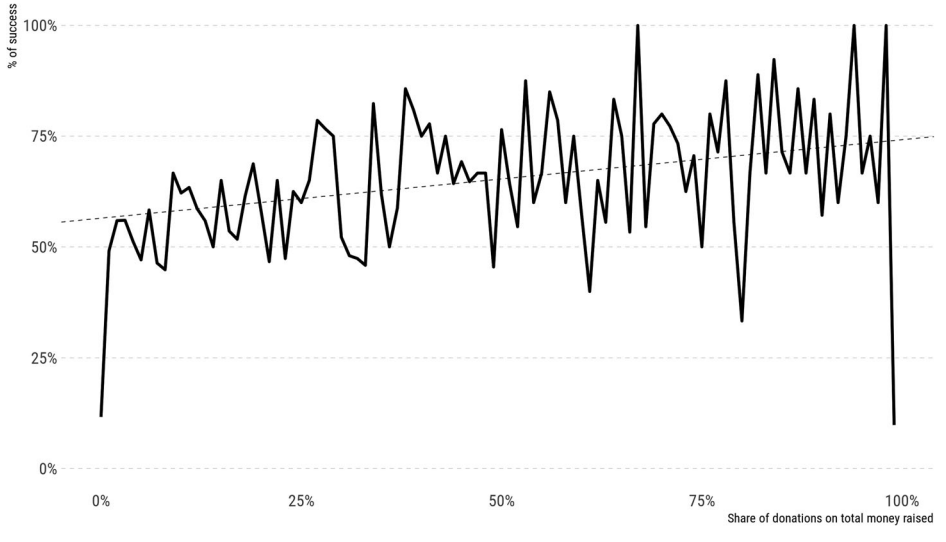

Figure 3. Percentage of successful projects at each level of donations' share, with linear fit.

combination of donation and transaction is a predictor of project success. They conclude that reciprocal giving is an important element of reward crowdfunding.

To summarize, our paper provides evidence that the *nature* of the rewards levels used in reward crowdfunding impacts the likelihood of success of a crowdfunding campaign. We show that campaign success is positively correlated with rewards that propose a direct participation to the project, and that as such mobilize both the self- and social-image concerns of pledgers, as well as providing a signal of openness and transparency to the crowd.

5. Conclusion

What determines the success of campaigns in reward crowdfunding? Previously, studies have identified the importance of conveying the quality of a project and its respective creator. Communication with the crowd has repeatedly been found to influence funding success (e.g. Mollick 2014; Kromidha and Robson 2016; Gafni, Marom, and Sade 2017; Allison et al. 2017; Clauss et al. 2018). Also the size of project creators' personal network (e.g. Mollick 2014; Colombo, Franzoni, and Rossi-Lamastra 2015) and their expertise (e.g. Butticè, Colombo, and Wright 2017; Skirnevskiy, Bendig, and Brettel 2017) matters.

What else can project creators do to increase their chances of funding success? We find that the structure of the reward levels is another important channel for the creator to attract potential pledgers. Projects that offer a higher share of reward levels providing enhanced participation possibilities have a higher probability of success. This includes being an extra in the movie, after show backstage access or a meet&greet with the creator of the project. This result is robust to controlling for the fact that those reward levels are usually the most expensive, thus contributing *per se* more to project success, and for the role of donations.

These findings substantiate our hypotheses that rewards appealing to the self-/social-image of pledgers can enhance crowd support. Nonetheless, out of all the ways in which self- and social-image concerns can be mobilized, only direct participation shows a significant positive correlation with project success. This might be due to the very nature of online interaction. If pledgers care for their *on-line* identity, i.e. for the group of peers found in venues like social networks, then the geographical location should not impact much the scope of social-image rewards. However, if pledgers care more for their *local* identities, i.e. care for the group of peers that live and work around them, then the geographical dispersion of pledgers matters. Since the geographic location of a project's pledger can be virtually anywhere, the scope of the social-image reward types varies. Showing support by wearing some *merchandising* may have a limited social-image effect, if the project is not known in the supporter's neighborhood; for instance, if the supporter lives in a small rural village and not in the city where the project is based. In contrast, *participation* rewards not only express support of the project but they also provide the relevant audience, that is, the other participants in a meet&greet and, of course, the project creators themselves. Our results are in line with this differentiated effect of social-image concerns due to supporters being geographically scattered.

Our findings support the intuition that one of the key tasks of project creators is to create a feeling of community around the project, and sustaining this feeling during the whole campaign (Gerber, Hui, and Kuo 2012; Belleflamme, Lambert, and Schwienbacher 2014). The study further proves that not all types of reward cater to the building of a community feeling equally well. While self-/social-image concerns are also triggered by other reward level types (public credits for support, merchandising or simply an item that facilitates remembering support), we only find evidence for an effect when pledgers participate in the ongoing crowd effort in a more literal sense. Despite not being the most widespread of reward types, rewards offering the actual experience of being part of the project increase the likelihood of success more than rewards allowing the pledgers to show support (on a bag or t-shirt) or being publicly mentioned as a supporter.

Moreover, participation rewards also potentially increase the discourse between creator and crowd, thus opening up ways to gain insights into what the crowd wants, i.e. a better understanding

of 'demand-side narratives' (Nambisan and Zahra 2016). At a more general level, this is in line with Stanko and Henard (2017) who argue that crowdfunding benefits innovation via 'open search' as backers actively contribute to the innovation process by providing feedback/ideas. The type of reward levels offered by the project creator may play a role in encouraging discourse between project and its community during the campaign.

The fact that merely offering participation reward levels raises success chances points to a possible alternative explanation. It could be argued that participation-related rewards might play the role of (imperfect) signals of the quality of a project: if a project owner is confident enough to propose open, transparent direct participation rewards, then the perceived quality of the project could increase. The growing availability of crowdfunding data will allow researchers to look under the hood of crowdfunding campaigns, in order to disentangle the two effects and better understand the interplay of self- and social-image and its role in the funding of entrepreneurial projects.

Naturally, our results reflect the specific conditions of the platform we analyzed. Startnext's focus is more on creative/media projects (categories like movie, music, literature, art) than on tech start-ups. While our results do not depend on a single category, it remains to be tested, of course, to what extent they hold for the tech sector for which we have few data (27 projects in tech categories like design, invention, games) but which is the focus of other platforms, like Kickstarter or Indiegogo. Nevertheless, our analysis shows that participation rewards are employed by projects across all categories, see Figure 1. Thus it seems plausible that – since experience rewards are not something exclusive to creative/media projects but can also be implemented by projects from other categories – including such rewards should be beneficial to project success.

6. Implications for practitioners

We conclude with some practical implications of our results. A straightforward take-away message for project creators is to consider incorporating rewards that allow for participation. Potential crowdfunders seem to appreciate, if they can not only donate to the project or purchase the product/service but also experience the project from close up. This could mean getting personally in touch with the creators behind the project but most likely also means interaction with like-minded fellow pledgers. This increased feeling of being a part of the project, of belonging to the project's community, seems to be a valuable return for those who identify with the project.

Importantly, our result holds also when controlling for actual choices – i.e. offering participation rewards increases success even netting out the fact that these rewards are chosen. Opening up a project for participation might hence provide a transparency and quality signal to the crowd.

Participation-related rewards may also create value in the opposite direction. Pledgers who are excited about the project and have linked up with it are a valuable knowledge source for the project to tap into. They may provide useful input to the creators regarding design, promotion, and sales channels. Finally, given the potential benefits for pledgers and creators, reward crowdfunding platforms may want to encourage project creators to implement rewards that induce participation.

Notes

1. See Agrawal, Catalini, and Goldfarb (2014), Belleflamme, Omrani, and Peitz (2015), Moritz and Block (2016), Short et al. (2017), Butticè et al. (2018) for recent surveys of the crowdfunding literature.
2. Startnext employs the threshold pledge model, as Kickstarter. If pledges reach the target amount by the deadline, the project is funded and pledges are paid; else, no transaction takes place.
3. See, more generally, the social psychology literature on social identity theory (Tajfel and Turner 1979).
4. See Crosetto and Regner (2018) for another study based on this dataset. The focus of that earlier paper is on funding dynamics and the extent of self pledges.
5. We drew 360 projects, without replacement, uniform random from the set of all Startnext projects for which we have data. We then crawled the resulting projects to retrieve reward level information from the Startnext web site.

Because of malformed URLs and other technical details we could meaningfully crawl only 346 out of the 360 projects. We decided not to add further draws to fill in the 14 missing projects to avoid adding bias.

Acknowledgments

We are grateful to Startnext, especially Anna Theil, for providing the data and valuable discussions. We would like to thank Armin Schwienbacher and audiences in Mannheim, Jena and at the 6th Crowdinvesting Symposium in Munich for feedback. Daniel Meyer and Javier Changoluisa provided excellent research assistance.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

Tobias Regner gratefully acknowledges support by Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) - project number 628902.

References

Agrawal, Ajay, Christian Catalini, and Avi Goldfarb. 2014. "Some Simple Economics of Crowdfunding." *Innovation Policy and the Economy* 14 (1): 63–97.

Akerlof, George A., and Rachel E. Kranton. 2000. "Economics and Identity." *Quarterly Journal of Economics* 115 (3): 715–753.

Allison, Thomas H., Blakley C. Davis, Justin W. Webb, and Jeremy C. Short. 2017. "Persuasion in Crowdfunding: An Elaboration Likelihood Model of Crowdfunding Performance." *Journal of Business Venturing* 32 (6): 707–725. ISSN 0883-9026. doi:10.1016/j.jbusvent.2017.09.002. URL magenta http://www.sciencedirect.com/science/article/pii/S0883902617307784.

André, Kévin, Sylvain Bureau, Arthur Gautier, and Olivier Rubel. 2017. "Beyond the Opposition Between Altruism and Self-interest: Reciprocal Giving in Reward-based Crowdfunding." *Journal of Business Ethics* 146 (2): 313–332.

Andreoni, James. 1990. "Impure Altruism and Donations to Public Goods: A Theory of Warm-glow Giving." *The Economic Journal* 100 (401): 464–477.

Andreoni, James, and B. Douglas Bernheim. 2009. "Social Image and the 50–50 Norm: A Theoretical and Experimental Analysis of Audience Effects." *Econometrica* 77 (5): 1607–1636.

Beaulieu, Tanya, and Suprateek Sarker. 2013. "Discursive Meaning Creation in Crowdfunding: A Socio-Material Perspective."

Belleflamme, Paul, Thomas Lambert, and Armin Schwienbacher. 2014. "Crowdfunding: Tapping the Right Crowd." *Journal of Business Venturing* 29: 585–609.

Belleflamme, Paul, Nessrine Omrani, and Martin Peitz. 2015. "The Economics of Crowdfunding Platforms." *Information Economics and Policy* 33: 11–28.

Bénabou, Roland, and Jean Tirole. 2005. "Incentives and Prosocial Behavior." *American Economic Review* 96 (5): 1652–1678.

Bénabou, Roland, and Jean Tirole. 2011. "Identity, Morals, and Taboos: Beliefs As Assets." *The Quarterly Journal of Economics* 126 (2): 805–855.

Bitterl, Sally, and Martin Schreier. 2018. "When Consumers Become Project Backers: The Psychological Consequences of Participation in Crowdfunding." *International Journal of Research in Marketing* 35 (4): 673–685.

Bodner, Ronit, and Drazen Prelec. 2003. "Self-signaling and Diagnostic Utility in Everyday Decision Making." *The Psychology of Economic Decisions* 1: 105–26.

Bolton, Gary E., and Axel Ockenfels. 2000. "Erc: A Theory of Equity, Reciprocity, and Competition." *American Economic Review* 90 (1): 166–193.

Borst, Irma, Christine Moser, and Julie Ferguson. 2017. "From Friendfunding to Crowdfunding: Relevance of Relationships, Social Media, and Platform Activities to Crowdfunding Performance." *New Media & Society* 38: 1–19.

Bretschneider, Ulrich, and Jan Marco Leimeister. 2017. "Not Just An Ego-trip: Exploring Backers' Motivation for Funding in Incentive-based Crowdfunding." *The Journal of Strategic Information Systems* 26 (4): 246–260.

Butticè, Vincenzo, Massimo G. Colombo, and Mike Wright. 2017. "Serial Crowdfunding, Social Capital, and Project Success." *Entrepreneurship Theory and Practice* 41 (2): 183–207.

Butticè, Vincenzo, Chiara Franzoni, Cristina Rossi-Lamastra, and Paola Rovelli. 2018. *The Road to Crowdfunding Success: A Review of Extant Literature*. Oxford, UK: Oxford University Press.

Chemla, Gilles, and Katrin Tinn. 2019. "Learning Through Crowdfunding." *Management Science*.
Chen, Yan, and Sherry Xin Li. 2009. "Group Identity and Social Preferences." *American Economic Review* 99 (1): 431–57.
Clauss, Thomas, Robert J. Breitenecker, Sascha Kraus, Alexander Brem, and Chris Richter. 2018. "Directing the Wisdom of the Crowd: the Importance of Social Interaction Among Founders and the Crowd During Crowdfunding Campaigns." *Economics of Innovation and New Technology* 27 (8): 709–729.
Colombo, Massimo G., Chiara Franzoni, and Cristina Rossi-Lamastra. 2015. "Internal Social Capital and the Attraction of Early Contributions in Crowdfunding." *Entrepreneurship Theory and Practice* 39 (1): 75–100.
Cordova, Alessandro, Johanna Dolci, and Gianfranco Gianfrate. 2015. "The Determinants of Crowdfunding Success: Evidence From Technology Projects." *Procedia-Social and Behavioral Sciences*181: 115–124.
Crosetto, Paolo, and Tobias Regner. 2018. "It's Never Too Late: Funding Dynamics and Self-pledges in Reward-based Crowdfunding." *Research Policy* 47 (8): 1463–1477.
Du, Zhao, and Kanliang Wang. 2017. "More Options Make Crowdfunding Campaigns More Successful? Investigation of the Underlying Mechanism."
Ellingsen, Tore, and Magnus Johannesson. 2008. "Pride and Prejudice: The Human Side of Incentive Theory." *American Economic Review* 98 (3): 990–1008.
Ellman, Matthew, and Sjaak Hurkens. 2019. "Optimal Crowdfunding Design." *Journal of Economic Theory* 184: 104939.
Fehr, Ernst, and Klaus M. Schmidt. 1999. "A Theory of Fairness, Competition, and Cooperation." *The Quarterly Journal of Economics* 114 (3): 817–868.
Frydrych, Denis, Adam J. Bock, and Tony Kinder. 2016. "Creating Project Legitimacy–the Role of Entrepreneurial Narrative in Reward-Based Crowdfunding." In *International Perspectives on Crowdfunding: Positive, Normative and Critical Theory*, 99–128. Emerald Group Publishing Limited.
Frydrych, Denis, Adam J Bock, Tony Kinder, and Benjamin Koeck. 2014. "Exploring Entrepreneurial Legitimacy in Reward-based Crowdfunding." *Venture Capital* 16 (3): 247–269.
Gafni, Hadar, Dan Marom, and Orly Sade. 2017. "Are the Life and Death of an Early Stage Venture Indeed in the Power of the Tongue? Lessons From Online Crowdfunding Pitches."
Gerber, Elizabeth M., Julie S. Hui, and Pei-Yi Kuo. 2012. "Crowdfunding: Why People are Motivated to Post and Fund Projects on Crowdfunding Platforms." In *Proceedings of the International Workshop on Design, Influence, and Social Technologies: Techniques, Impacts and Ethics*, Vol. 2, 11.
Gleasure, Rob, and Joseph Feller. 2016. "Emerging Technologies and the Democratisation of Financial Services: A Metatriangulation of Crowdfunding Research." *Information and Organization* 26 (4): 101–115.
Grossman, Zachary, and Joël J. Van der Weele. 2017. "Self-image and Willful Ignorance in Social Decisions." *Journal of the European Economic Association* 15 (1): 173–217.
Güth, Werner, Matteo Ploner, and Tobias Regner. 2009. "Determinants of in-group Bias: Is Group Affiliation Mediated by Guilt-aversion?." *Journal of Economic Psychology* 30 (5): 814–827.
Kagel, John H., and Alvin E. Roth. 2016. *The Handbook of Experimental Economics, Volume 2: The Handbook of Experimental Economics*. Princeton, USA: Princeton university press.
Kromidha, Endrit, and Paul Robson. 2016. "Social Identity and Signalling Success Factors in Online Crowdfunding." *Entrepreneurship & Regional Development* 28 (9–10): 605–629.
Kunz, Michael Marcin, Ulrich Bretschneider, Max Erler, and Jan Marco Leimeister. 2017. "An Empirical Investigation of Signaling in Reward-based Crowdfunding." *Electronic Commerce Research* 17 (3): 1–37.
Lin, Yan, Wai Fong Boh, and Kim Huat Goh. 2014. "How Different are Crowdfunders? Examining Archetypes of Crowdfunders and Their Choice of Projects. In *Academy of Management Proceedings*, Vol. 2014/1, 13309. Academy of Management.
List, John A., William S. Neilson, and Michael K. Price. 2016. "The Effects of Group Composition in a Strategic Environment: Evidence From a Field Experiment." *European Economic Review* 90: 67–85.
Mollick, Ethan. 2014. "The Dynamics of Crowdfunding: An Exploratory Study." *Journal of Business Venturing* 29 (1): 1–16.
Moritz, Alexandra, and Joern H. Block. 2016. "Crowdfunding: A Literature Review and Research Directions." In *Crowdfunding in Europe*, 25–53. Springer.
Müller, Daniel. 2019. "The Anatomy of Distributional Preferences with Group Identity." *Journal of Economic Behavior & Organization* 166: 785–807.
Nambisan, Satish, and Shaker A. Zahra. 2016. "The Role of Demand-side Narratives in Opportunity Formation and Enactment." *Journal of Business Venturing Insights* 5: 70–75. ISSN 2352-6734. doi:10.1016/j.jbvi.2016.05.001. URL magenta http://www.sciencedirect.com/science/article/pii/S2352673416300075.
Parhankangas, Annaleena, and Maija Renko. 2017. "Linguistic Style and Crowdfunding Success Among Social and Commercial Entrepreneurs." *Journal of Business Venturing* 32 (2): 215–236.
Ploner, Matteo, and Tobias Regner. 2013. "Self-image and Moral Balancing: An Experimental Analysis." *Journal of Economic Behavior & Organization* 93: 374–383.
Polzin, Friedemann, Helen Toxopeus, and Erik Stam. 2018. "The Wisdom of the Crowd in Funding: Information Heterogeneity and Social Networks of Crowdfunders." *Small Business Economics* 50 (2): 251–273.
Ryu, Sunghan, and Young-Gul Kim. 2018. "Money is Not Everything: A Typology of Crowdfunding Project Creators." *The Journal of Strategic Information Systems* 27 (4): 350–368.

Short, Jeremy C., David J. Ketchen, Aaron F. McKenny, Thomas H. Allison, and R. Duane Ireland. 2017. "Research on Crowdfunding: Reviewing the (very Recent) Past and Celebrating the Present." *Entrepreneurship Theory and Practice* 41 (2): 149–160.

Simons, Alexander, Markus Weinmann, Matthias Tietz, and Jan vom Brocke. 2017. "Which Reward Should I Choose? Preliminary Evidence for the Middle-Option Bias in Reward-Based Crowdfunding." In *Proceedings of the 50th Hawaii International Conference on System Sciences*.

Skirnevskiy, Vitaly, David Bendig, and Malte Brettel. 2017. "The Influence of Internal Social Capital on Serial Creators' Success in Crowdfunding." *Entrepreneurship Theory and Practice* 41 (2): 209–236.

Soetevent, Adriaan R.. 2005. "Anonymity in Giving in a Natural Context–a Field Experiment in 30 Churches." *Journal of Public Economics* 89 (11–12): 2301–2323. ISSN 00472727. doi:10.1016/j.jpubeco.2004.11.002.

Stanko, Michael A., and David H. Henard. 2017. "Toward a Better Understanding of Crowdfunding, Openness and the Consequences for Innovation." *Research Policy* 46 (4): 784–798.

Strausz, Roland. 2017. "A Theory of Crowdfunding: A Mechanism Design Approach with Demand Uncertainty and Moral Hazard." *American Economic Review* 107 (6): 1430–76.

Tajfel, Henri, and John C. Turner. 1979. "An Integrative Theory of Intergroup Conflict." *The Social Psychology of Intergroup Relations* 33 (47): 74.

Tirole, Jean, Armin Falk, and Roland Bénabou. 2016. *Narratives, imperatives and moral reasoning*. Technical report, Mimeo.

Usman, Sardar Muhammad, Farasat Ali Shah Bukhari, Muhammad Usman, Daniel Badulescu, and Muhammad Safdar Sial. 2019. "Does the Role of Media and Founder's Past Success Mitigate the Problem of Information Asymmetry? Evidence From a Uk Crowdfunding Platform." *Sustainability* 11 (3): 692.

Wang, Nianxin, Qingxiang Li, Huigang Liang, Taofeng Ye, and Shilun Ge. 2018. "Understanding the Importance of Interaction Between Creators and Backers in Crowdfunding Success." *Electronic Commerce Research and Applications* 27: 106–117.

Weisel, Ori, and Robert Böhm. 2015. "'Ingroup Love' and 'Outgroup Hate' in Intergroup Conflict Between Natural Groups." *Journal of Experimental Social Psychology* 60: 110–120.

Yuan, Hui, Raymond Y. K. Lau, and Wei Xu. 2016. "The Determinants of Crowdfunding Success: A Semantic Text Analytics Approach." *Decision Support Systems* 91: 67–76.